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A Note on the Number of 1933 Famine Victims

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IN A RECENT paper in this journal[1] Wheatcroft estimated the number of victims of the 1932–33 famine at 4 to 5 million. The purpose of this note is to draw attention to new data which imply that the number was actually substantially larger.

Recently Soviet scholars have been given access to the materials of the 1937 census. Using this and other archival material they have published important data on the demographic history of the 1930s, an example of which is set out in Table 1. Its three authors work in the demographic section of the Goskomstat research institute and it was published in the leading Soviet statistical journal.

TABLE 1

ESTIMATED POPULATION OF THE USSR IN 1927–1940 (MILLIONS)

	Population at beginning of year	Births	Deaths	Increase	Rates per thousand Births	Deaths	Increase
1927	148.7	7.0	4.0	3.0	46.3	26.5	19.7
1928	151.6	6.9	3.9	3.1	45.3	25.3	20.0
1929	154.7	6.9	4.1	2.7	44.1	26.5	17.6
1930	157.4	6.7	4.3	2.4	42.2	27.0	15.2
1931	159.8	6.5	4.5	2.0	40.5	28.0	12.5
1932	161.9	5.8	4.8	1.1	35.9	29.5	6.5
1933	162.9	5.5	11.5	−5.9	34.7	71.6	−36.9
1934	156.8	4.8	3.4	1.4	30.4	21.7	8.7
1935	158.2	5.2	3.3	2.0	33.0	20.6	12.4
1936	160.1	5.6	3.2	2.4	34.6	20.0	14.7
1937	162.5	6.5	3.6	3.0	39.9	21.7	18.2
1938	165.5	6.5	3.5	3.0	39.0	20.9	18.2
1939[a]	188.8	7.6	3.8	3.8	40.0	20.1	20.0
1940[a]	192.6	7.0	4.2	2.8	36.1	21.7	14.4
1941[a]	195.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Note: [a]Contemporary frontiers.
Source: E. Andreev, L. Darsky & T. Khar'kova, 'Opyt otsenki chislennosti naseleniya SSSR 1926–1941 gg', *Vestnik statistiki*, 7 (1990). (The apparent discrepancies in the column 'Increase' are due to rounding errors.)

Using this table, the following simple calculations can be made.

(1) The decline in the population of the USSR in 1933 was 5.9 million.

(2) The number of famine deaths in 1933 equals the actual deaths in 1933 (11.5 million) less the normal level of deaths in 1933. An estimate of the 'normal' level

of deaths in 1933 inevitably has an arbitrary element in it, since the death rate in 1927–40 (excluding 1933) varied between 29.5 and 20.1. If one assumes that, for fundamental demographic reasons, under normal circumstances the death rate would have been somewhere in between the level of the pre-collectivisation period (average for 1927–29—26.1) and the level of the post-famine period (average for 1935–40—20.8), then the range for the 'normal' level of deaths in 1933 is 4.3–3.4 million. This means that the number of famine deaths in 1933 is in the range 7.2–8.1 million, the exact number depending on the counterfactual assumption made about the 'normal' death rate in 1933.[2]

(3) The population deficit resulting from the famine is the sum of the number of famine deaths and the decline in the number of births.

(a) The actual birth rate in 1933 was 34.7 per thousand. This was well below the pre-collectivisation period (average for 1927–29—45.2) and the post-famine period (average for 1936–40—38.1). Assuming that the 'normal' figure would have been between these two figures, then the range for the 'normal' level of births in 1933 is 7.4–6.2 million. Since the actual level of births was 5.5 million, this means that the decline in the number of births was in the range 0.7–1.9 million. This means that the population deficit resulting from the famine at 1 January 1934 was in the range 7.9 to 10.0 million.

(b) The actual number of births in 1934 was 4.8 million. The 'normal' level, calculated as above, would have been in the range 7.1–6.0 million. This means that the famine-induced decline in births in 1934 was in the range 1.2–2.3 million. This in turn means that the population deficit resulting from the famine at 1 January 1935 was in the range 9.0–12.3 million. (An analogous calculation using the Wheatcroft data produces a population deficit at 1 January 1935 of 4–5 million, i.e. the estimated additional deaths, plus a births decline in the range of 3.2–5.4 making a total population deficit in the range 7.2–10.4. The discrepancy between the two estimates of the population deficit is less significant than that between the two estimates of famine deaths.)

(4) The above figures are underestimates both of famine deaths and of the total population deficit since they take no account of famine deaths in 1932 and 1934 and the low birth rate of 1932.

The new figures for famine deaths are much higher than those of Wheatcroft. What explains this? Wheatcroft did not have access to the 1937 census and his calculations are based on the population registration data. The figures in Table 1 are based primarily on the corrected census results of 1926, 1937 and 1939. Interpolation of data for the intercensus years was done by correcting the population registration data to allow for assumed underestimation of births and deaths. The estimation of births makes use of the 1960 natality survey. From a statistical point of view, however, the explanation of the difference between Wheatcroft and Andreev, Darsky & Khar'kova (subsequently ADK) is not the sources they used but the different figures they used for birth and death rates. Both the birth and death rates used by ADK are much higher than those used by

Wheatcroft. ADK argue that the population registration data for the early 1930s seriously underestimate the actual number both of births and of deaths.

How accurate are these new estimates of famine losses? Fundamentally, their accuracy depends on the accuracy of the 1926 and 1937 censuses, as corrected by ADK, and the accuracy of their estimates for the intercensus years. The idea that the censuses are fairly reliable seems plausible. The corrections that ADK make to them also seem plausible. Much more controversial are their estimates for the intercensus years. A quick look over their calculations suggests the following possible sources of error:

(1) The birth rates (and correspondingly the death rates) for the intercensus period 1927–36 and in particular the period 1932–34 have been seriously exaggerated. According to the population registration data, the birth rate in 1933 was 25.3 per thousand. ADK assume that this is a major understatement, and that the actual birth rate was 34.7 This is an enhancement of 9.4 or 37%. For 1934 the birth rate according to the population registration data was in the range 24.9–26.4. According to ADK it was 30.4, an enhancement of 5.5–4.0 or 22–15%. Hence for these two years, ADK generate an additional 2.2 million births and, correspondingly, deaths. Reducing the birth rate assumed by ADK for 1932, 1933 and 1934 to the figures given by the population registration data, and reducing mortality equally, reduces the number of famine deaths implicit in the ADK data to a range whose mid-point lies within the range estimated by Wheatcroft. Doing the same also for 1931 reduces it to a range whose mid-point lies almost at the bottom of the range estimated by Wheatcroft. This is the basic explanation for the difference between Wheatcroft and ADK. Wheatcroft assumes that the sharp fall in natality to very low levels in 1933–34 shown in the population registration data really happened. ADK assume that 'the low registered level of births in 1933 and partly in 1934 reflects the death of pregnant women and also a high degree of underregistration of children who were born and quickly died in the famine period'.[3]

Is it plausible that there was a very low level of natality in 1933 and 1934 or is it not? The new figures are close to those assumed by Maksudov.[4] It is noteworthy, however, that Lorimer in his classic work estimated birth rates for the 1920s and for 1935–39, but declined to estimate them for 1929–34.[5] One way of seeking to establish the plausibility of various assumptions is to consider what is known about other famines. Wheatcroft has suggested (in correspondence with the author) that evidence from other societies undergoing famine and also from Saratov in 1920–21 indicates that famine normally results in a reduction in both conceptions and births.

It is also possible to check the cohorts generated by various assumptions as to birth and death rates in 1932–34 against the age structure of the population in January 1937 as known from the census of that year.[6] Some calculations which the present author has done on these lines suggest that of the birth rates shown in the population registration data, only that of 1936 (which does not affect the estimates of famine deaths) seems clearly on the low side (i.e. difficult to match with the age structure of the population in January 1937). On the other hand, comparison of

the survivor rates generated by comparing the age distribution of the population in January 1937 with the two rival figures for births, suggests to the present author that the ADK figures are more plausible than the population registration data. The population registration data imply that a child born in 1933 had the same chance of being alive in 1937 as one born in 1929. On the other hand, the ADK data imply that a child born in 1933 had a much lower chance of being alive in 1937 than one born in 1929. This matches the present writer's own *a priori* notions of what one would expect as a result of a famine.

In the absence of fresh evidence, one can only say at present that there are two rival estimates of famine deaths and that the difference can be entirely accounted for by different estimates of births, and correspondingly of deaths, in 1931–34 (the biggest difference being in estimated births in the famine year 1933).

The reason why there is less difference between the two estimates of the population deficit than between the two estimates of famine deaths is that the low birth rate estimates based on the population registration data naturally generate correspondingly high estimates of the shortfall in births.

(2) Emigration. ADK use a figure for net emigration of 0.2 million. As they themselves point out, this is a 'minimal' figure. Using a higher one would reduce the apparent death rate. Even trebling their figure, however, would not affect the estimates very much. Although in his report of 14 March 1937 to the head of TsUNKhU the deputy head of the department of population and medical care of TsUNKhU estimated intercensus net emigration at 2 million (of whom 1.3 million were supposedly Kazakhs who left in 1930–32) it seems clear that this was part of an attempt to explain away the embarrasingly low population totals shown in the 1937 census, especially that for Kazakhs, and not a serious estimate of net emigration.[7]

(3) Repression. ADK cite incompatible data for the number of victims.[8] Errors here will affect the population data for the post-famine period, but seem unlikely to have a major impact on the 1932–34 estimates.

(4) Population in the areas annexed by the USSR in 1939–40. ADK assume that at the time of the 1939 census this was 20.1 million. As they themselves point out, this is a conventional figure and may not be accurate. This does not affect estimates of the famine victims.

It is reasonable to expect that the studies now under way by Soviet historians, statisticians and demographers will soon produce more detailed, accurate and precise data. In particular, by studying the areas worst affected (Ukraine, North Caucasus, Volga, Kazakhstan) it should be possible to throw more light on the situation.[9]

Conclusion

Estimates of the number of victims of the 1932–34 famine depend crucially on the birth rates assumed in 1931–34, especially in the famine year 1933. Wheatcroft assumes that the very low birth rates shown in the population registration data for

1933 and 1934 reflect a real sharp fall in natality. ADK assume that the contemporary population registration data for both births and deaths are gross underestimates. Hence their data imply a much higher estimate of the number of victims than those of Wheatcroft. Their data suggest that the number of victims in 1933 was in the range 7.2–8.1 million, that the population deficit at 1 January 1934 was in the range 7.9–10.0 million and at 1 January 1935 9.0–12.3 million. These estimates take no account of famine deaths in 1932 and 1934 and the low natality in 1932 and hence probably underestimate (given their demographic assumptions) the total deaths and population deficit resulting from the famine of 1932–34. The difference between the two estimates of the total population deficit is less significant than the difference between the two estimates of famine deaths. Further work is required to explore the plausibility of the different demographic assumptions and hence shed more light on this subject.

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[1] S. G. Wheatcroft, 'More Light on the Scale of Repression and Excess Mortality in the Soviet Union in the 1930s', *Soviet Studies*, 42, 2 (April 1990), pp. 355–367.

[2] This is similar to Conquest's estimate. He calculated a figure of 7 million which he regarded as a conservative estimate. See R. Conquest, *The Harvest of Sorrow* (London, Hutchinson, 1986) chapter 16. On the other hand, Conquest's estimate of an additional 4 million non-famine abnormal deaths in 1930–37 is rejected by the new data. Conquest pays insufficient attention to the decline in births.

[3] *Vestnik statistiki*, 7 (1990), p. 39.

[4] S. Maksudov, *Poteri naseleniya SSSR* (Vermont, 1989), p. 150.

[5] F. Lorimer, *The Population of the Soviet Union* (Geneva, League of Nations, 1946) ch 9.

[6] See *Vestnik statistiki*, 7 (1990), pp. 72–73 and *Sotsiologicheskie issledovaniya*, 7 (1990), Tables 8 & 9.

[7] *Sotsiologicheskie issledovaniya*, 6 (1990), p. 23.

[8] *Vestnik statistiki*, 7 (1990), p. 42.

[9] For example, Kul'chitsky is working on an account of the famine in the Ukraine. For a condensed version of one of the chapters see *Soyuz*, 3 (1990). The present Note shows that Kul'chitsky was overoptimistic in thinking that 'if it were possible to find the true summary data for the census of 1937, the problem of the demographic consequences of the famine of 1933 would be resolved by scientific calculations and not by hypotheses'. For another discussion of Ukrainian losses, see A. L. Perkovsky and S. I. Pirozhkov, 'Demografichni vtrati Ukrainskoi RSR u 30-ti roki', *Ukrainskii istorichnii zhurnal*, No. 8, 1989.